

Serial No. 10/693,908  
Amdt. dated March 17, 2005  
Reply to Office Action of December 17, 2005

Docket No. P-0606

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Canceled)
2. (Currently Amended) ~~The method of claim 1,~~ A method for eliminating contamination of a FED (field emission display) by applying a direct current high voltage to an anode electrode of the FED, comprising:  
  
converting a direct current high voltage into a first high voltage pulse having uniform frequency and duty cycle or a second high voltage pulse having a frequency and a duty cycle varied according to time; and  
  
applying the converted first high voltage pulse or second high voltage pulse to an anode electrode of the FED, wherein a predetermined voltage is applied to a scan driving unit of the FED when the second high voltage pulse is applied to the anode electrode.
3. (Currently Amended) ~~The method of claim 1,~~ A method for eliminating contamination of a FED (field emission display) by applying a direct current high voltage to an anode electrode of the FED, comprising:

converting a direct current high voltage into a first high voltage pulse having uniform frequency and duty cycle or a second high voltage pulse having a frequency and a duty cycle varied according to time; and

applying the converted first high voltage pulse or second high voltage pulse to an anode electrode of the FED, wherein the first high voltage pulse is outputted to the anode electrode of the panel for a preset pre-aging time.

4. (Currently Amended) ~~The method of claim 1,~~ A method for eliminating contamination of a FED (field emission display) by applying a direct current high voltage to an anode electrode of the FED, comprising:

converting a direct current high voltage into a first high voltage pulse having uniform frequency and duty cycle or a second high voltage pulse having a frequency and a duty cycle varied according to time; and

applying the converted first high voltage pulse or second high voltage pulse to an anode electrode of the FED, wherein the second high voltage pulse is outputted to the anode electrode of the panel for a preset main aging time.

5. (Currently Amended) ~~The method of claim 1,~~ A method for eliminating contamination of a FED (field emission display) by applying a direct current high voltage to an

anode electrode of the FED, comprising:

converting a direct current high voltage into a first high voltage pulse having uniform frequency and duty cycle or a second high voltage pulse having a frequency and a duty cycle varied according to time; and

applying the converted first high voltage pulse or second high voltage pulse to an anode electrode of the FED, wherein width of the second high voltage pulse is gradually increased with the passage of time.

6. (Currently Amended) The method of ~~claim 1~~ claims 2, 3, 4 or 5, further comprising:

converting the first or second high voltage pulse into a high voltage pulse of low energy;  
and

applying the low energy high voltage pulse to the anode electrode of the panel.

7. (Canceled)

8. (Currently Amended) ~~The apparatus of claim 7,~~ An apparatus for eliminating contamination of a FED (field emission display) by applying a direct current high voltage to an anode electrode of the FED, comprising:

an aging controlling unit for converting a direct current high voltage into a first high voltage pulse having uniform frequency and duty cycle or a second high voltage pulse having a frequency and a duty cycle varied according to time and applying the converted first high voltage pulse or second high voltage pulse to an anode electrode of a panel, wherein the aging controlling unit applies a predetermined voltage to a scan driving unit of the FED in applying of the second voltage pulse to the anode electrode.

9. (Currently Amended) ~~The apparatus of claim 7,~~ An apparatus for eliminating contamination of a FED (field emission display) by applying a direct current high voltage to an anode electrode of the FED, comprising:

an aging controlling unit for converting a direct current high voltage into a first high voltage pulse having uniform frequency and duty cycle or a second high voltage pulse having a frequency and a duty cycle varied according to time and applying the converted first high voltage pulse or second high voltage pulse to an anode electrode of a panel,

wherein the aging controlling unit converts the direct current high voltage into a high voltage pulse having uniform frequency and duty cycle for a preset pre-aging time, converts the direct current high voltage into a high voltage pulse having frequency and duty cycle varied with the passage of time for a preset main aging time and applies a predetermined voltage to the scan driving unit for the main aging time.

10. (Original) The apparatus of claim 9, wherein the aging controlling unit includes:

- a power controller for applying a predetermined voltage to a scan driving unit according to a power control signal;
- a pulse controller for outputting a pulse control signal corresponded to uniform frequency and duty cycle or frequency and duty cycle variable with the passage of time on the basis of a program control signal;
- a pulse generator for outputting a pulse signal corresponded to the pulse control signal outputted from the pulse controller;
- a high voltage pulse outputter for converting a direct current high voltage into a high voltage pulse on the basis of the pulse signal from the pulse generator and applying it to the anode electrode; and
- a program controller for detecting an electric current applied from the high voltage pulse outputter to the anode electrode, outputting a program control signal to the pulse controller on the basis of the detected current value and a preset limit current value and outputting a power control signal to the power controller.

11. (Original) The apparatus of claim 10, wherein the pulse controller includes:

- an oscillator for receiving the program control signal from the program controller and outputting a frequency;

a frequency converter for converting the frequency outputted from the oscillator into a predetermined frequency;

a duty converter for outputting a duty cycle corresponded to the program control signal outputted from the program controller; and

a logical circuit for outputting a pulse control signal to the pulse generator on the basis of the frequency converted in the frequency converter and the duty cycle outputted from the duty converter.

12. (Currently Amended) ~~The apparatus of claim 7,~~ An apparatus for eliminating contamination of a FED (field emission display) by applying a direct current high voltage to an anode electrode of the FED, comprising:

an aging controlling unit for converting a direct current high voltage into a first high voltage pulse having uniform frequency and duty cycle or a second high voltage pulse having a frequency and a duty cycle varied according to time and applying the converted first high voltage pulse or second high voltage pulse to an anode electrode of a panel,

wherein the aging controlling unit further includes a means for converting the first and second high voltage pulse into a high voltage pulse of low energy, herein, width of the second high voltage pulse is gradually increased with the passage of time.

13. (Original) The apparatus of claim 12, wherein the aging controlling unit includes:
- a power controller for applying a predetermined voltage to the scan driving unit of the FED according to a power control signal;
  - a pulse controller for outputting plural pulse control signals having uniform or variable frequency and duty cycle with the passage of time;
  - a pulse generator for outputting plural switching control signals corresponded to the plural pulse control signals from the pulse controller;
  - a high voltage pulse outputter having a first switching means and converting a direct current high voltage applied from the outside into a high voltage pulse by being turned on/off according to the switching control signal outputted from the pulse generator;
  - an energy converter having a second switching means, storing the high voltage pulse from the high voltage pulse outputter in the storing means, converting the high voltage pulse stored in the storing means into a high voltage pulse of low energy by being turned on/off according to the switching control signal from the pulse generator and applying the converted high voltage pulse of low energy to the anode electrode; and
  - a program controller for detecting a current outputted from the high voltage pulse outputter and outputting a power control signal to the power controller on the basis of the detected current value and a present limit current value.

14. (Original) The apparatus of claim 13, wherein the pulse controller includes:

- an oscillator for outputting a pulse signal having a certain frequency;
- a frequency converter for converting a frequency of a pulse signal outputted from the oscillator;
- a duty converter for converting a duty cycle of a pulse signal outputted from the oscillator; and
- a logical circuit for outputting plural pulse control signals to the pulse generator on the basis of the frequency converted by the frequency converter and the duty cycle converted by the duty converter.

15. (Original) In an aging method for eliminating contamination of a FED (field emission display) by applying a direct current high voltage to an anode electrode of the FED, an aging method of a FED, comprising:

- converting a direct current high voltage into a first high voltage pulse having uniform frequency and duty cycle and applying the converted first high voltage pulse to an anode electrode of a panel for a preset pre-aging time; and

- converting a direct current high voltage into a second high voltage pulse having variable frequency and duty cycle and applying the converted second high voltage pulse to the anode electrode of the panel for a preset main aging time;



wherein a predetermined voltage is applied to a scan driving unit of the FED when the second high voltage pulse is applied to the anode electrode.

16. (Original) The method of claim 15, wherein width of the second high voltage pulse is gradually increased with the passage of time.

17. (Original) The method of claim 15, further comprising:  
converting the first and second high voltage pulse into a high voltage pulse of low energy; and  
applying the low energy high voltage pulse to the anode electrode of the panel.

18. (Original) An aging apparatus of a FED (field emission display), comprising:  
a means for converting a direct current high voltage into a first high voltage pulse having uniform frequency and duty cycle and applying the converted first high voltage pulse to an anode electrode of a panel for a preset pre-aging time;  
a means for converting the direct high voltage into a second high voltage pulse having variable frequency and duty cycle and applying the converted second high voltage pulse to the anode electrode of the panel for a preset main aging time; and

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a means for applying a predetermined voltage to a scan driving unit of the FED in applying of the second high voltage pulse to the anode electrode.

19. (Original) The apparatus of claim 18, further comprising:

a means for converting the first and second high voltage pulse into a high voltage pulse of low energy and applying the low energy high voltage pulse to the anode electrode of the panel.

20. (Original) The apparatus of claim 18, wherein a width of the second high voltage pulse is gradually increased with the passage of time.